ABSTRACT OF THE DISCLOSURE

The present generally relates to apparatus and methods for instrumentation associated with a downhole deployment valve or a separate instrumentation sub. In one aspect, a DDV in a casing string is closed in order to isolate an upper section of a wellbore from a lower section. Thereafter, a pressure differential above and below the closed valve is measured by downhole instrumentation to facilitate the opening of the valve. In another aspect, the instrumentation in the DDV includes sensors placed above and below a flapper portion of the valve. The pressure differential is communicated to the surface of the well for use in determining what amount of pressurization is needed in the upper portion to safely and effectively open the valve. Additionally, instrumentation associated with the DDV can include pressure, temperature, seismic, acoustic, and proximity sensors to facilitate the use of not only the DDV but also telemetry tools.